

**IN THE CLAIMS**

Claims 1-5 (canceled)

6. (previously presented) An apparatus for continuously purifying lithium carbonate comprising:

a dissolver which is a baffled reactor to dissolve lithium carbonate that includes a mixer/disperser,

a carbon dioxide gas dispersion tube,

a wash water filtrate/mother liquor filtrate recycle line,

a cooler,

a stilling well to separate gas and undissolved lithium carbonate solids from the resultant lithium bicarbonate solution, and

a continuous chemical grade lithium carbonate crystal feeder;

an inline filter to remove insoluble impurities from the lithium bicarbonate solution coming from the stilling well;

a heat exchanger to recover heat from the hot mother liquor that is recycled to the dissolver;

a heated gas sealed crystallizer with mixer to decompose the lithium bicarbonate solution to form low sodium lithium carbonate crystals, carbon dioxide gas, and mother liquor;

a slurry valve to remove the low sodium lithium carbonate crystals and mother liquor from the gas sealed crystallizer;

a gas line to continuously return the carbon dioxide produced in the crystallizer to the dissolver;

a separator such as a continuous belt filter to separate the low sodium lithium carbonate from the mother liquor and a wash water section to wash the lithium carbonate crystals;

a pump and line to return the mother liquor and wash filtrate to the dissolver;

a mother liquor bleed to control the sodium level and to maintain a constant liquid volume;

a carbon dioxide make up source.

7. (previously presented) The apparatus of Claim 6, comprising a reactor using absorption columns, such as a sieve tray or a Scheibel column, to facilitate absorption of carbon dioxide.